

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

62-61



KING'S

FRUIT TREE BULLETIN

PUBLISHED IN THE INTEREST OF BETTER FRUIT

VOLUME II.

DANSVILLE, N. Y., JANUARY, 1913

NUMBER 1

The Why and the How of a Yearling Tree

The President of the Western New York Horticultural Society, William C. Barry, in an address delivered before that body some time ago, gave some very valuable suggestions to fruit growers as to how to bring fruit trees into bearing earlier. He laid great stress on careful planting, and in particular cautioned fruit growers against injuring the tree in any way by careless handling. He declared that trees would respond to good treatment and come into bearing much earlier, thus saving the fruit grower large unnecessary expense. It is an established fact, therefore, that young trees properly treated will come into bearing earlier than is ordinarily the case and this article is written to show that a fresh dug yearling tree is most desirable for the fruit grower to plant with this end in view.

In the first place it must be understood what is meant by a yearling tree. The root system on this tree is in reality three years old. The natural seedling takes one year to develop from the pit or seed. Then it is transplanted in the nursery row and budded during the summer months to some particular variety. This little tiny bud or "eye" remains dormant in the body of the natural seedling one inch above the ground until the following spring when it begins to grow and the nurseryman removes the top of the natural seedling just above this "eye," and

keeps off from the seedling all the natural suckers that spring up, thus giving the budded sprout an opportunity to draw all the substance from the root system of the tree. In this way it makes a remarkable growth in one year, attaining a height in Western New York nurseries of from two to six feet, depending on the variety, the culture, the soil and the

season, and in Southern and Western nurseries growing much more rapidly and producing a larger tree of spongy texture.

To begin with, you must insist that your nurseryman gives you a fresh dug yearling tree rather than one that has been dug in the fall and kept in a modern packing house or cold storage plant all winter. Many planters

quently do not dig them in the fall so there is an opportunity of getting the one year trees fresh dug, if you deal with a reliable nursery firm and insist that you be given such trees.

The one-year tree can be easily dug in the spring by the nurseryman while the buds are still dormant and all the fibrous roots preserved intact. This is a great advantage in transplanting. These young tender roots are capable of adapting themselves to their new home at once and thus the little tree, if the ground is in good condition and if the earth is packed firmly around these tender roots in the process of planting, will suffer practically no setback at all and start to grow just as vigorously as if it had remained in the nursery row. There are practically no failures at all such as fruit growers experience in planting two or three year old trees.

Then too, you should be able to buy these trees at a cheaper price than the two-year-olds. The nurserymen dislike to sell them because they must go through the nursery rows and dig up the cream of the flock, leaving the smaller ones to develop into a smaller grade of two year trees in the next season, but usually they are listed at a much cheaper price than the two year first grade trees because the expense of growing them in the nursery another year is eliminated. The cost of transportation and boxing is

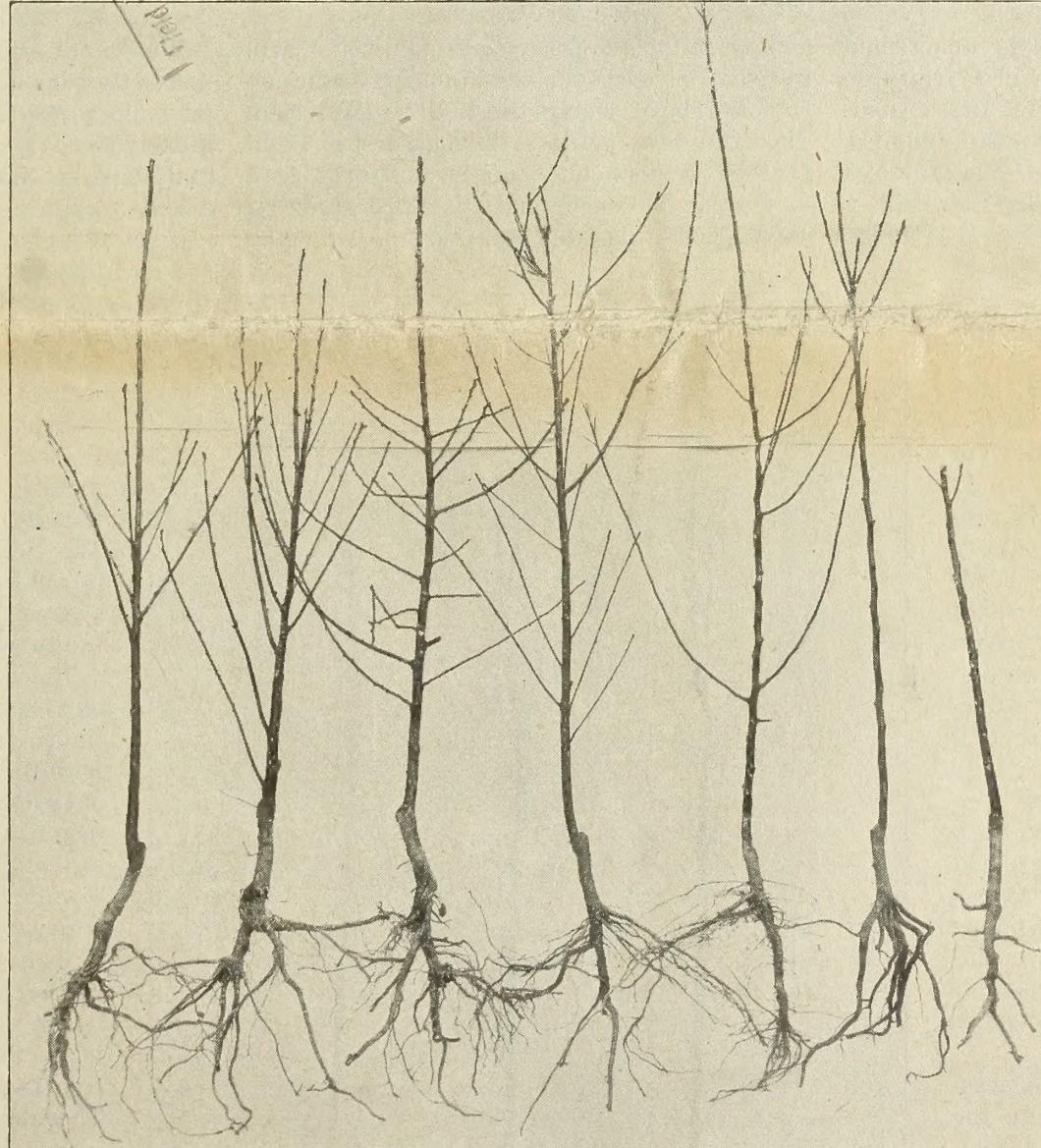


Photo. of Yearling Trees: Note the splendid root system: Reading from left to right; No. 1, Black Tartarian Cherry; No. 2, Montmorency Cherry; No. 3, Lombard Plum; No. 4, Elberta Peach; No. 5, McIntosh Red Apple; No. 6, Kieffer Pear; No. 7, Yearling pruned for transplanting.

are aware of the fact that 95% of the two-year-old trees are stored in the packing houses of the large nursery firms in the fall, and thus given a fearful setback even before the planter ever gets them in the spring. But it is different with the yearling. The nurserymen do not plan in the majority of cases to sell these trees until they are two years old and conse-

much less and this is an added inducement both to the fruit grower and nurseryman.

A very important consideration in regard to the yearling is that the fruit grower can head the tree high or low to suit his taste, that is the limbs that are to form the frame-work of the trees can be started high or low and as many of these limbs as are desired can be al-

KING'S FRUIT TREE BULLETIN

lowed to grow and the rest pinched off when they are just beginning to sprout. To appreciate this fact, it must be understood that the body of the yearling tree from top to bottom is filled with buds and when the top is cut off at any height these buds in the spring will all start to grow. It is only necessary to break off the ones that are not wanted. Thus the tree is started right from the beginning according to the taste of the planter and the necessity of cutting and pruning reduced to a minimum. Many orchardists, some of them the most successful in the country, now claim that this is practically all the pruning an apple tree should get until it comes to bearing age. In fact it is now quite certain that the less pruning the young apple tree gets, the sooner it will bear.

There is a wide difference of opinion as to

the height to cut back the yearling. Nurserymen usually top one year apples, cherries, plums and pears in the nursery row at a height of from 34 to 39 inches from the collar. Sour cherries are headed somewhat lower. You can see from this that it would require considerable pruning by the fruit grower to get a low head on the two year trees that he ordinarily gets from the nurserymen. The proper height at which to cut back the yearling in order to secure a low head is from 18 to 24 inches from the collar.

The low head is now being adopted by practically all the up-to-date orchardists of the Western States and the practice is rapidly finding favor in the East. Low headed trees make spraying, thinning and harvesting much easier and more convenient. In addition the fruit is

not so apt to be blown off by high winds.

On a planting of 121 yearling trees made a few years ago in a Seneca County, N. Y. orchard, the whole number of growths made the first year was 464 or nearly four limbs to each tree. The total number of inches grown was 6869, making an average growth per limb of 14 4-5 inches. These trees made a remarkable showing the second year and received no pruning at all. They were simply allowed to grow naturally and thus came into bearing five or six years earlier than they would if cut and pruned every year. When the fruit set, the branches naturally drooped a little with their load of fruit, and thus the head opened out in such a way as to make a perfect top with sufficient open space to produce ideal conditions for the maturing and coloring of the fruit.

The Standard Grades of Two Year Trees

Many people would like to know just what is the best grade of two-year-

How to Prune Them at Transplanting

little tree under this height and caliper is classed in the fourth grade.

old trees to plant. It is well to understand at the very outset that the size of a fruit tree at planting time should not be the first consideration. A tree may be good looking and big too, but have no intrinsic value. Yet we know of course that quality and size together make a very fine combination. Varieties and kinds differ very much in their habits of growth and tree characteristics. For instance a Stark apple tree will usually make a very big growth at two years here in our Genesee Valley nurseries and a Jonathan usually makes a poor showing alongside of it. Yet there are few planters who would want to set out a Stark apple in preference to Jonathan. A sour cherry grows low with a spreading head. The sweet sorts, on the other hand, run taller. The same is true of pears and plums. They have their own distinctive habits of growth in the nursery row. Then too, the section where the trees are grown counts wonderfully. It is absolutely impossible here in Western New York to put the growth into a two-year-old tree that Southern and Western trees make in the same time. These points are important and should be considered carefully by the purchaser of trees. Character counts for more than size.

But there are certain standard measurements that serve to indicate the first, second, and third grade of two-year-old trees. The pictures on this page are actual photographs of first, second and third grade apple trees such as our nurseries will send to customers. The height of the first grade is from 5 to 7 feet, the second grade approximately 4 to 5 feet, and the third grade 3 to 4 feet; all measured at the collar with the root system excluded. Some nurserymen, and in fact this practice is quite

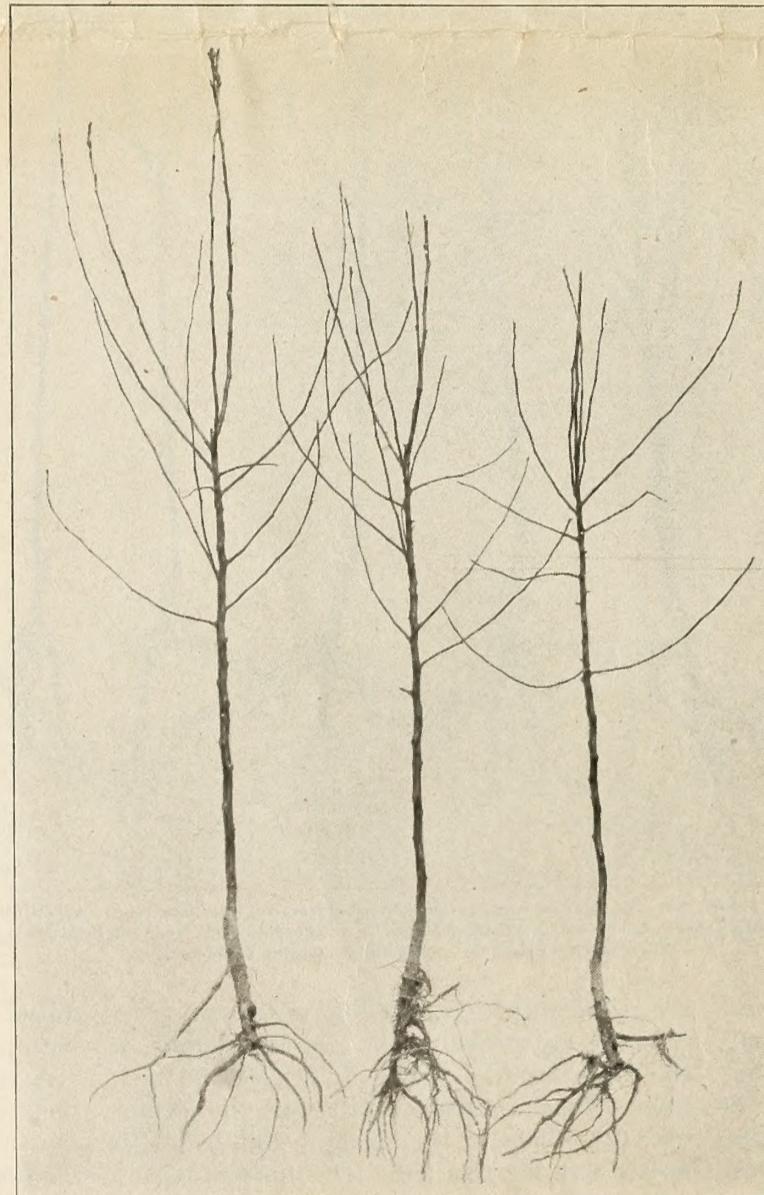
general in the wholesale market, insist that a tree shall have certain measurements at the collar just above where the bud was inserted. Thus the first grade must measure 11-16 of an inch in diameter, the second or 4 to 5 foot grade 5-8 inch, and the third grade 1-2 inch. Everything that makes a sturdy healthy

We do not insist on caliper in our nurseries unless the planter so desires, but we take special pains to see that the tree conforms approximately to the proper height for its grade, and that above all things, it has character, namely, a well developed head, a good root system, and a clean straight trunk. These things are all important.

Experience shows that it does not make any material difference in the quality and future growth of the tree what size at two years old it is when transplanted except that the orchardist will not, of course, get the immediate growth on a smaller grade that he would on the larger grade. The limb growth on all of them must be cut back so that in reality the root system and the body of the tree are the things to be looked at first.

The two year cannot be headed at any height like the yearling. All the limbs, however, should be removed with the exception of four and these cut back to about six inches from their origin. Care should be taken to cut so that the topmost eye will be on the outside of the limb. Thus a more spreading head will be secured.

Many people see no reason for thus cutting back the tree, and as they like to see it look as big as possible, they leave the limb growth just as the tree is sent them by the nurseryman. There would not be any serious objection to this plan now that we have come to see that the less pruning a young tree gets the better, if it were not for the fact that the tree cannot withstand the shock of transplanting and maintain all its limb growth. It must therefore be cut back. This consideration is of vital importance, so much so that probably one half the failures of properly dug and handled trees are due to this neglect of pruning at transplanting time.



BEN DAVIS APPLE TREES
Standard Sizes: No. 1, 5 to 7 ft.; No. 2, 4 to 5 ft.; No. 3, 3 to 4 ft.

The Orchard—How to Make It

THE ORCHARD SITE—Distance to market, means of transportation, storage, labor, competition and by-products enter into the problem of determining the orchard site. These economic factors deserve careful consideration for they cut a large figure and vary considerably for different sections. The location of the orchard should not be on low level ground especially in sections where late spring frosts are prevalent. Such land does not provide good air drainage. Pockets on rolling ground should also be avoided for they furnish a settling place for cold air that has no chance to get out. Hilltops are not desirable especially where severe cold winds sweep over them and where the ground is more or less apt to be washed by heavy rains. Northern or Eastern exposures on slightly rolling ground are usually given the preference by experienced orchardists, although southern slopes often give splendid satisfaction; the only possible objection to land sloping in this latter direction is that the trees are more or less subject to late spring frosts.

Strong, deep, well drained soil gives the best results. Of course much depends on the kind of trees planted. Apples prefer a rich sandy loam or clay loam. Cherries and plums do well on medium soils. Peaches are at their best on warm, light sandy soil. In general, however, it may be said that poor drainage or what is known as "wet feet" is not desirable for any tree. On the other hand, excessive dryness on soils that are porous and devoid of humus will do harm in two ways: The trees do not make a suitable growth and severe cold accompanied by dry winds causes so much evaporation of water from the limbs of the tree that the roots cannot obtain sufficient supply and it is winter killed.

PREPARATION OF SOIL FOR THE ORCHARD—It is very essential to induce strong healthy growth during the first few years of the tree's life and nothing is more important than to have the ground in good condition at planting time. There are three main factors to be given consideration. The physical character of the ground should be in the best possible state. Deep plowing and thorough harrowing are most essential. Then the life in the soil is important. We know that there are soil bacteria, germ life that grab the nitrogen in the air and fix it. Anything that gives these sources of plant food an opportunity to do their work increases soil fertility. The chemical supply, or in other words the food for plant life, can be best increased by the application of barnyard manure or the plowing under of crops of clover, vetch and rye. Commercial fertilizers may be used also but not without most careful study of what element or elements are lacking in the field.

It is well from a practical point of view to have some hoed crop on the land for one or two seasons before the trees are planted, as it will subdue the weeds and make the land easier to handle.

WHEN TO PLANT—Most kinds of trees with the exception of peaches and sweet cherries

may be planted to advantage in the fall. Even peaches will do well planted at this time in the warmer sections of the country. A most desirable time is early spring before the trees to be planted have begun to swell their buds to any appreciable extent; not so early, however, as to get on the ground while it is still cold and wet. Much will depend on the season, but usually from April 10th to May 1st is the best time.

DISTANCE FOR PLANTING—It is pretty well established by our modern orchardists that, in the past, trees have been planted entirely too close. Plans should be made from the beginning that will take into account the size of the trees when they reach full maturity and the fact that they will then require air and sunlight around them in order to give the best results. No definite rules can be laid down but the following are approximate distances:

Apples 25 to 30 feet for fillers, 40 to 50 feet for permanent trees. Standard Pears 20 to 25 feet apart. Dwarf Pears 10 to 12 feet. Peaches, plums and apricots 16 to 20 feet. Sour cherries 18 to 23 feet. Sweet cherries 25 to 40 feet, Quinces 10 to 12 feet. Grapes—rows 10 to 16 feet apart, 8 to 10 feet in rows. Currants and Gooseberries, 4 feet apart. Raspberries and Blackberries, 4 by 5 feet apart.

Planting Table

Number of Trees Required Per Acre Planted in Squares	
Feet apart	Number per acre
50x50	17
40x40	27
35x35	35
33x33	40
30x30	50
25x25	70
20x20	108
18x18	133
15x15	205
12x12	302
10x10	433
8x8	680
5x5	1,725
4x4	2,725
3x3	4,840

FILLERS AND INTERCROPPING—Most people do not care or cannot afford to wait for the permanent trees planted in the orchard to come into bearing, and the difficulty is overcome by planting cultivated crops between the trees such as beans, potatoes, etc.; also bush fruits like blackberries, raspberries, and currants. When this practice is resorted to, it is imperative to keep up a high state of cultivation and fertilize the ground so as not to rob the trees. Fillers are now extensively planted between the permanent trees. Peaches and plums are often used between apples with splendid results. In these days however, when spraying has been reduced to such a science, it is much more desirable to plant quick bearing varieties between the permanent trees, as they require the same treatment and are just as profitable. They should be removed in from 12 to 15 years to make way for the permanent trees.

SYSTEMS OF ORCHARD PLANTING—The following plans are suggested by the Michigan Agricultural College Experiment Station:

There are several systems of orchard plant-

ing,—the square system, in which the trees are set at the corners of a square, making the rows equidistant in both directions; the quincunx system, which is the same as the square system, except that a tree is planted in the center of the square, and the hexagonal or equilateral triangular system, in which the trees are equidistant apart in all directions.

Of these, the square system is the most commonly used. While it does not permit of planting as many trees per acre as the other systems, it has the advantage of being easily laid out, is the easiest to cultivate and permits of systematic and definite thinning when the trees begin to crowd each other.

P P P P	P F P F P	F F F F F
P P P P	P F P F P	F F F F F
P P P P	P F P F P	F F F F F
P P P P	P F P F P	F F F F F
Square system		Square system with fillers

It is easily modified into the rectangular system, in which the rows are farther apart in one direction than the other.

The quincunx system permits of the planting of a great many more trees per acre than the square system. The number per acre will be increased from 45% in small orchards to 98% in large orchards. The advantages of this

P P P P	P F P F P	F P F P F
P P P P	P F P F P	F P F P F
P P P P	P F P F P	F P F P F
P P P P	P F P F P	F P F P F
Quincunx system		Quincunx system with fillers

system are similar to those of the square system. The popularity of both is due to the possibility of planting the trees quite thickly, and of thinning with a fair degree of success at whatever distance the trees are set. In such cases early bearing and maturing trees should be used as fillers and planted intermediate between the permanent trees. As indicated in the diagrams, the first proper thinning of the square system is performed by removing every other tree and alternating in the rows, and leaving the orchard in the quincunx system. This in turn may be thinned by removing the central tree, leaving the orchard in the square system again. Thus an orchard set 20 feet square, when properly thinned, leaves the trees 40 feet quincunx or in squares 28.28x28.28 feet, running diagonally across the field. This, properly thinned, leaves the trees in squares 40 feet apart.

The hexagonal or equilateral triangular system is popular because it distributes the trees evenly over the field and permits of planting the greatest number of trees per acre at a good distance apart. Approximately 15% more trees

[Continued on page 8]

KING'S FRUIT TREE BULLETIN

King's Fruit Tree Bulletin



ISSUED QUARTERLY AT DANSVILLE, N. Y.

Subscription Price 25c a Year

PUBLISHED BY

King Brothers Nurseries

Our Motto

"Hold the Mirror up to the Truth"

MARTIN KING, JR., EDITOR

"It is claimed," says Green's Fruit Grower, "that there are 8,000,000 farms in this country, 7,000,000 of which have no supply of fruit in their gardens. This means that seven out of every eight farmers live from year to year without strawberries, raspberries, blackberries, and grapes growing on the farm to supply and beautify their tables. Considering this, how can we wonder that the girls and boys want to leave the farm for the city. If we want to keep our children on the farm, if we want to make the farm attractive for the wife and for ourselves, we must have upon our tables the attractive and healthful small fruits as well as peaches, pears, apples, cherries and plums. It must be that farmers do not realize how easy it is and how little it will cost to set out a few plants of the strawberry, raspberry and blackberry, and a few grape vines, or to plant a few peach, apple, pear and plum trees."

powerful combinations that crush out the small competitor in order that they may occupy the field alone and make their own price, the rights of labor and capital under the new and strange conditions created by the industrial system as it now exists in our large centers of population,—these problems demand the best thought of our citizenship both in city and country. The rural life of America, too, is making some demands on the would-be-statesman. Rural credits, parcels post that will be a real parcels post, better roads, business protection against frauds of every description and especially a strict regulation of the commission houses—these things are merely a small part of the problem of the re-adjustment of our rural life to conform to the ideals of the men who now live in the open country, who know their power, and who will be content with nothing less than justice.

To solve these problems, we need statesmen who will advocate the right regardless of popular clamor, men who, if they cannot get the people to follow them, will go down to defeat with their cause rather than be accomplices in folly or wrong. The politicians whom we do not need, those whom in the end we will despise, are the men who humor our fancies, who flatter us with glowing promises today that they may rob us tomorrow.

And to be able to put men of the right stamp in public office, we must have an alert and enlightened electorate, citizens of sterling character and not "floaters." If our teachers and preachers would give us a little less talk about

"moral uplift" and get down to the old-fashioned doctrine of common honesty, there would not be so much hypocrisy among us and a good deal more real progress. What a pleasure it is to go out into the open country and meet the real men of America—the men whose word is as good as a bond, who ask no favors or offices from any man, who despise cowardice and dishonesty when they see it in the citizen who sells his vote on election day or in fact any man who does not give an open, honest deal to every man and woman.

If we could only infuse the spirit of these men into the life of our cities and into the lives of the millions who crowd our ports of entry every year, no one need have a fear for the future of our country. Everybody is becoming educated these days, yes, but intellectual training is worthless unless the moral and religious sense of men is trained as well. Education of the intellect alone will not stand the test when the hour strikes to try out a man. It does not produce the stamp of men that our fathers were, and we need the old type today worse than ever now that the interest of every man is wound up so closely with the interests of all his fellowmen.

The demand of the hour is:

"God give us men! a time like this demands
Strong minds, great hearts, true faith, and ready
hands;
Men whom the lust of office does not kill;
Men whom the spoils of office cannot buy;
Men who possess opinions and a will;
Men who have honor,—men who will not lie;
Men who can stand before a Demagogue
And damn his treacherous flatteries without winking;
Tall men, sun-crowned, who live above the fog
In public duty and in private thinking."

—Our Consulting Department—

In addition to sending our customers our Bulletin quarterly, we invite them to make use of our Consulting Department whenever in need of advice about trees. We will tell you what to do ourselves,—teach you the nursery business if you want to learn it, or put you in touch with experts on the particular subject about which you seek information. This is an original and special feature of our firm. We have helped others, let us help you.

KING BROS. NURSERIES, Dansville, N. Y.

WE ARE rather proud of the fact that our Bulletin in a comparatively short time has found its place as one of the leading publications in the country devoted to fruit growing and nursery work. Our readers are all over the broad land. We have won the confidence and respect of hundreds of the most discriminating orchardists and horticulturists from Maine to Texas, and we are planning to go on increasing this list and increasing in efficiency from year to year. We attribute our success to just one thing. . We have aimed to give our readers a simple, plain exposition of the truth.

At the present time, Elberta, Belle of Georgia, Champion, and Carman supply fully one half of the peaches produced east of the Rocky Mountains, according to J. H. Hale, the Peach King.

The great problem of this age is the problem of distribution. B. F. Yoakum, the noted rail-road man, figures out that it cost in 1911 just \$7,000,000,000 to distribute \$6,000,000,000 worth of products from the farm to the consumer. City people would do well to reflect on this matter before blaming the farmer for the high cost of living. It would seem now that the time is ripe for a real earnest consideration of the fact that the farmer gets about thirty-five cents of the consumer's dollar. Men, such as Mr. H. W. Collingwood, the able editor of the *Rural New Yorker*, have seen the injustice of this thing for years. They have long since shown us what the middlemen have done and are doing, and it begins to look now as though they were about to succeed in driving home their argument to the whole people, both consumers and producers, namely, that we must eliminate the middleman.

Do not fail to prune the young tree when you are transplanting it. It is a great temptation for the man who does not know the difference, to leave on all the limbs when he gets a well branched and well headed two year tree from the nursery.

You are invited to make use of our Consulting Department whenever in need of advice about trees. We have saved thousands of dollars to our customers by calling their attention to some weakness in their orchard plans, and thus affording them an opportunity to correct the matter before it would have been too late.

"I know of an orchard of twenty-five acres of apples that has paid more than 10% per year for four years on a valuation of \$1000 per acre." John P. Case, Ex-President New York State Fruit Growers' Association.

The fruit tree peddler and agent must go. He cannot compete with the responsible nurseries that ship their trees to the planter and deal with him direct. All middlemen are thus cut out of the bargain, and the profits go mutually to the planter and the grower of the trees. Yet it is a fact that millions of trees are still being sold by agents, some of them out-and-out grafters and fakirs who claim to have some wonderful new variety which they sell for \$1.00 per tree and buy for five cents each, and others working for nursery firms more or less reliable who pay them a commission of from 25% to 30% cash as soon as the order reaches the office of the firm. These agents are abroad in your vicinity for they are everywhere. Your friends are probably buying of them now. Why not suggest to the people you know to be interested in buying a few trees, that they get in touch with the nurseryman direct, and just compare prices before signing a contract with a tree agent. A young Dansville nurseryman who grows trees at wholesale to sell to these big retail nursery firms employing agents tells how his mother-in-law bought a "fine collection" at \$1.00 each from an agent some time ago and sent for "John to help her plant them because he understands it." They happened to be the same trees John sold the big nursery firm for 15 cents each, but he loved his mother-in-law and so went back to his nursery and dug up some fresh ones for her.

An Age of Unrest

Are we not deluged these days with all kinds of schemes for our physical, intellectual, moral and financial improvement! It is a question at times whether all the people back of them really have the interests of our people as a whole at heart, or whether they are not taken up merely as a means of affording their promoters an easy living or some little distinction and fame.

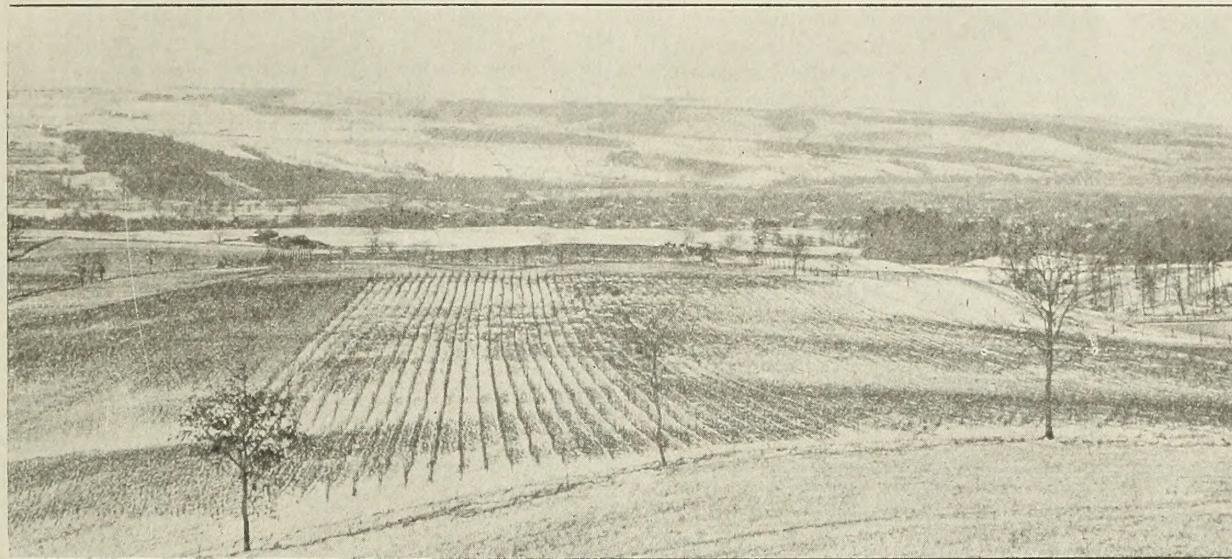
Back of it all, however, is a great upward evolutionary movement. There is no doubt but that we are at the opening of an era as significant as the beginning of the 16th century or the latter third of the 18th, and the harangues of ambitious and designing demagogues, skirt dancing politicians and muck rakers of all kinds are as important as the buzzing of the insects in springtime showing that the new vegetation and growth is beginning. The 16th century saw the introduction of extreme individualism in religion. In the 18th century, this principle was established in the state. Now the great pendulum is swinging us back with the danger that we may go too far the other way, and, in applying socialistic principles, that we may deprive the individual of his rights and make him a mere cog in the great socialistic machinery of the state.

There are big problems pressing hard for immediate solution. The enslavement of the poor in our great cities, the injustice of the

The Dansville Nurseries

25,000,000 Trees Here—150 Firms

Written for the Dansville Breeze by Martin King Jr., Dec. 9, 1912



WINTER SCENE IN THE UPPER GENESEE VALLEY, THE HOME OF THE KING BROS. NURSERIES
Our climate here makes the trees hardy and vigorous

IN CONSIDERING the factors that have contributed most to the wonderful growth of the nursery business in this town, adaptability of soil deserves perhaps the first place. The soil survey of the town of Dansville made by the Department of Agriculture shows eighteen distinct soil types. We have the Genesee silt loam of the valley floor—a rich deposit that was laid down mostly by a process of sedimentation during the epoch when a glacial dam to the north of Rochester held back the water and the whole Genesee Valley from Irondequoit Bay to Dansville—a distance of 55 miles—was a "finger" lake similar to the lakes of the central part of the state. This rich loam in the valley below Dansville grows fine cherries, peach and apples. Extending up the slopes of the hill-sides that surround our town there are fields of Dunkirk clay and silt loam best suited for pears, and some varieties of apples and plums. Then we have a ridge of Caneadea loams embracing many soil types to the east and south, fine ground for cherries, peach and apples. Splendid stands of peach trees have been grown on the slopes of Caneadea fine sand and gravelly loam south of the village. In fact, no two fields here have soils exactly alike; and, with so many types to choose from, the experienced nurserymen give great care to the selection of ground for planting. Many of them lease fields five miles outside the village where they know they can grow good trees.

Next in importance to the question of soil is the fact that this section is absolutely free from San Jose Scale or other dangerous plant diseases. Dansville nurserymen are proud of the fact that they have succeeded, in co-operation with the state nursery inspectors in keeping scale out of Dansville. Every scion or seedling that is shipped in here is given a thorough inspection; and, if found to be contaminated in any way, the whole shipment is rejected. Since these strict measures of protection are stringently enforced, dangerous insect

pests or fungi have no chance to gain a foothold here.

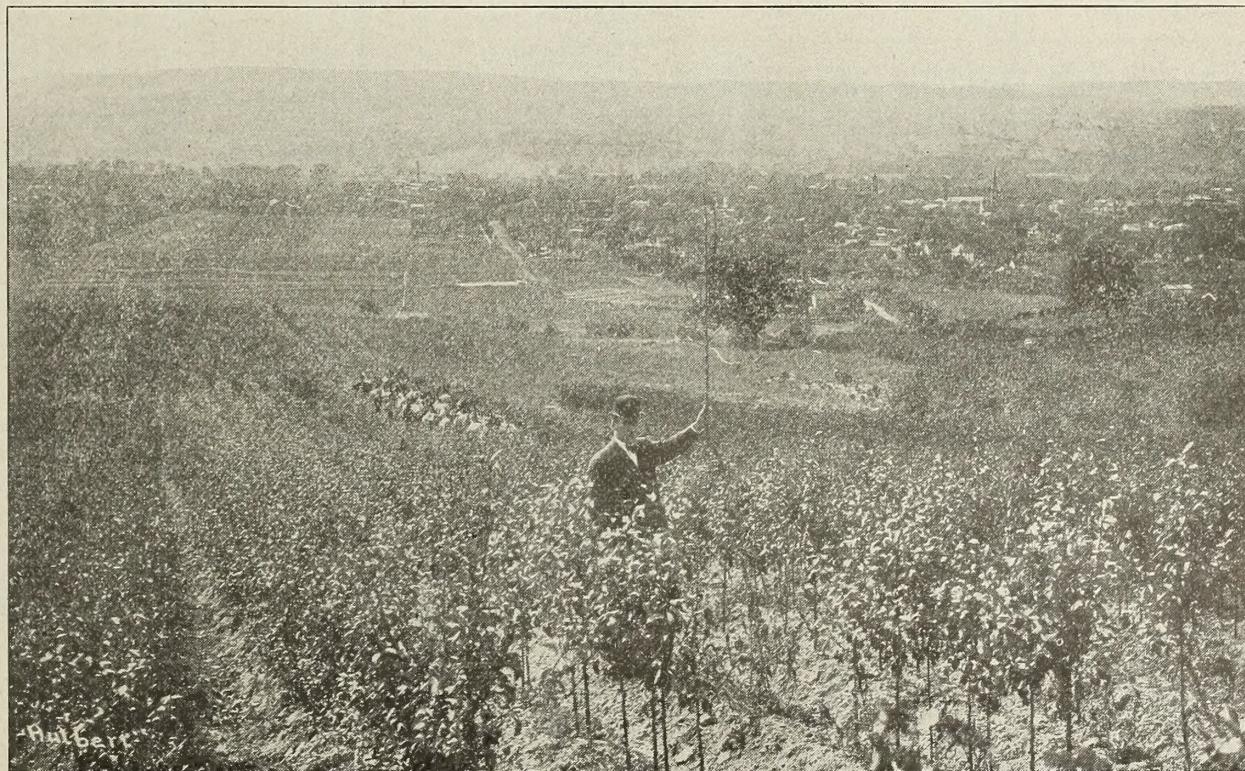
It is a well known fact that trees do not make the rank, spongy, growth here that they do in the South or on the prairie lands of the West; and, if the size of a one or two-year-old fruit tree alone is to be considered, Dansville trees cannot compare with these Southern or Western products. But no planter who knows the difference will ever plant a Southern or Western grown in preference to a Dansville grown tree. Some retail nurserymen elsewhere undertake to say that the Southern trees are just as good; and, as it is much cheaper to grow them at wholesale, these dealers make a practice of buying them rather than pay the higher price asked by the Dansville growers. There is no likeness at all, however, between Southern grown and Dansville grown trees. Our climate ripens up the wood and gives it firmness of texture so that the tree is acclimated to the climate of the northern states before it

any other section of the country. Dansville nurserymen who visit other nursery centers are surprised to find everybody working for some big company and are absolutely at a loss to account for the fact that none of these men ever think of attempting to start an independent concern. It is so different in Dansville. There is what may be called "local inspiration" here—an inspiration that every workman feels. He looks forward to the day when he, too, will be the proprietor of a nursery, and his name will appear in R. G. Dun and Bradstreets. The historian of Dansville, Mr. A. O. Bunnell, noted this fact as far back as 1902. He says in his history:

"A large number of the most successful and largest planters today are men who a comparatively few years ago were working for other nurserymen. This was largely brought about by western nurserymen who being anxious to take advantage of the splendid reputation of the local stock and advantages of soil and climate have shipped in millions of stock and contracted with local nurserymen to mature them here." The germ of the whole movement, however, began to grow back in the seventies. Some of the more independent of the nursery workmen of those days went in for themselves and their success inspired others to follow their example. It stands to the credit of the men of broad minds and high character who ran the larger nurseries in those early days that, far from attempting to freeze these small fellows out, they

leaves the nursery.

It would be an interesting study for a student of economics or of sociology to come to Dansville and acquaint himself with the condition that obtains here among Dansville nurserymen. It is a remarkable fact that there are some 150 independent proprietors in the town, for the most part skilled workmen who served their apprenticeship with some other grower and, as soon as they were able, started out for themselves. Nothing like it will be found in



This Photo of Dansville Showing a Block of King Bros. Pear Trees on the Hillside appeared in the Rural New Yorker, Nov., 1911

[Continued on page 12]

Fruits Recommended for Cultivation in the United States and Canada

By the American Pomological Society

Note.—We give here the recommendations of the Society on only such varieties as we can furnish planters. Any one desiring the complete list, can get it by applying for Bulletin No. 151 of the Bureau of Plant Industry, Department of Agriculture, Washington, D. C. We are also giving the recommendations for the first eight pomological districts only, as the larger share of our customers are embraced in this area. These recommendations ought to carry great weight with planters for they are accurate and reflect the "opinions and experiences of practical fruit growers within the district." Do not experiment with new kinds on a large scale. It is not good business policy. The old standards are still the leaders.

Pomological Districts as Defined by the American Pomological Society

District No. 1—Maine above 500 feet elevation; New Hampshire, Vermont and New York north of latitude 44°; Ontario north of Lake Simcoe and east of longitude 80°; Quebec, New Brunswick, and Prince Edward Island. The dominant natural feature of this district is the St. Lawrence Valley. Many of the hardier fruits flourish within its borders.

District No. 2—Nova Scotia; Maine below 500 feet elevation; New Hampshire and Vermont south of latitude 44°; Massachusetts; Rhode Island; Connecticut; New York south of latitude 44°, except Long Island; northern New Jersey above 500 feet elevation; Pennsylvania east of the Susquehanna River and above 500 feet elevation, north of latitude 41° west to the Allegheny River, and all of that portion of the State lying north of the Ohio River; Ohio and Indiana north of latitude 40°; the lower peninsula of Michigan; and Ontario south of Lake Simcoe. The Annapolis Valley of Nova Scotia, the North Atlantic coast, the lake region of Western New York, Ohio, Ontario, and Michigan, and the Hudson River Valley are the leading features of District No. 2. This may be considered the northern grape, peach, and winter-apple district.

District No. 3.—Long Island; New Jersey, except a small portion north; eastern Pennsylvania below 500 feet elevation; Delaware; and Maryland and Virginia below 500 feet elevation. This is the Delaware and Chesapeake Bay district. Though a small district, its productive capacity of the fruits that succeed within its borders is great.

District No. 4—Pennsylvania above 500 feet elevation and south of latitude 41°; Maryland, Virginia, North Carolina, South Carolina, Georgia, Mississippi, and Alabama above 500 feet elevation; West Virginia; Tennessee and Kentucky; Ohio and Indiana south of latitude 40°; southern Illinois below the general elevation of 500 feet, from the Wabash to the Mississippi; Missouri south of a line from near St. Louis and along the elevation of 1,000 feet to the southeast corner of Kansas; Oklahoma below 2,000 feet elevation; and Arkansas north of latitude 35°, also south of it wherever the elevation exceeds 500 feet. The Allegheny and the Ozark mountains and the valleys of the Ohio, the Tennessee, and the Cumberland, and portions of the Wabash, the Mississippi, and the Arkansas rivers are embraced within this district. Portions of it are noted fruit regions, while throughout its vast territory the hardier deciduous fruits flourish. Many of the varieties recommended succeed best in certain localities within the district. An exception to the general character of the district occurs in those portions of Kentucky, Tennessee, Arkansas, and southeastern Missouri lying near the Mississippi River, where varieties adapted to culture in districts 5 and 7 generally succeed.

District No. 5—Eastern North Carolina, South Carolina, and Georgia below 500 feet elevation; and Florida north of latitude 30° east of the Chattahoochee River and above 100 feet elevation. This district embraces the southern Atlantic seaboard, with its many frith-like indentations and valleys. The climate is generally mild, and within its borders many of the more tender deciduous fruits flourish.

District No. 6—Florida south of latitude 30°, the remaining portions of the State with elevations below 100 feet, and those portions of Alabama, Mississippi, Louisiana, Arkansas, and Texas lying below the 100-foot contour line as it skirts the coast from Florida to the Rio Grande. This is the southern peninsula and the Gulf Coast district. The successful culture of citrus and other subtropical fruits and nuts is restricted to the peninsula portion of Florida and to the Delta of the Mississippi. Tropical species are only recommended for that portion of Florida lying south of latitude 27°, and are indicated by the letter s in connection with the starring.

District No. 7—Florida west of the Chattahoochee River and above 100 feet elevation; Alabama, Mississippi, Louisiana, and Arkansas above 100 and below 500 feet elevation; and Teaxs south of Red River and above 100 and below 1,000 feet elevation. This may be denominated the valley district. It embraces portions of the Chattahoochee, Alabama, Pearl, Mississippi, Arkansas, Red, Sabine, Colorado, and Rio Grande valleys. The climate in the eastern and larger portion is warm and moist, in the extreme west more dry and tending toward aridity. A wide range of the more tender varieties and species is adapted to culture in the district.

District No. 8—Illinois north of the 500-foot contour line as it crosses the State between 38° and 39° latitude; a very small portion of southwest Wisconsin; Iowa south of about latitude 42° 30'; the Missouri River Valley portion of southeastern South Dakota; Nebraska and Kansas below 2,000 feet elevation; and Missouri north of a line drawn from near St. Louis and along the elevation of 1,000 feet to the southeast corner of Kansas. The Missouri and Mississippi valley sections of the district are its dominant features. The hardy deciduous fruits succeed in most portions, and commercial fruit growing is a rapidly developing industry.

District No. 9—Wisconsin, except the small southwest corner; Minnesota; upper Michigan; Iowa north of about latitude 42° 30'; North and South Dakota east of longitude 99°; and Canada west of longitude 80° and east of longitude 99°. This district embraces the upper lakes, including Winnipeg, the upper Mississippi and the Red River valleys. Only the hardier fruits succeed, but fair progress has been made in recent years in developing varieties adapted to this region.

Section 1.—Apples (*Malus*).

[KEY.—Abbreviations used in the descriptions of varieties. Form: c, conical; o, ovate; ob, oblate; obl, oblong; r, round. Size: l, large; m, medium; s, small; v, very. Color: b, blushed; c, crimson; d, dark; g, green; p, pale; r, red; ru, russet; s, striped; w, white; y, yellow. Flavor: a, acid; b, brisk; m, mild; p, pleasant; r, rich; s, sweet; sa, subacid; v, very; vi, vinous. Quality: b, best; g, good; p, poor; v, very. Use: c, cider; d, dessert; k, kitchen; m, market. Season: e, early; l, late; m, medium; v, very. Varieties known to succeed in a given district are indicated by cipher (0); if highly successful by two ciphers (00); if considered promising by a dagger (+); if not reported on by a dotted line (....).]

NAME	Description							Recommendations for the Several districts								
	Form	Size	Color	Flavor	Quality	Use	Season	1	2	3	4	5	6	7	8	9
Akin.....	c	ml	yr	sa	vg	dkm	l	+	0	0	0	0	0	0	0	0
Alexander.....	re	vl	gyrs	a	g	km	m	00	00	0	0	0	0	0	0	+
Arkansas.....	obl	l	yr	msa	vg	km	l	0	0	0	00	0	0	0	00	0
Baldwin.....	rc	ml	yrs	sa	vg	dkm	l	00	00	0	0	0	0	0	0	0
Banana.....	ob	m	yb	msa	vg	d	l	0	0	0	0	0	0	0	0	0
Ben Davis.....	rob	ml	yrs	s	g	m	l	+	0	0	00	00	0	0	00	0
Benoni.....	rob	ms	yr	msa	vg	d	me	0	0	0	00	0	0	0	00	0
Bietheimier.....	obe	vl	wyrs	sa	g	km	me	0	0	0	0	0	0	0	0	0
Bough.....	ob	ml	gy	s	vg	dk	e	+	00	0	00	0	0	0	0	0
Chenango.....	ob	m	wrs	sa	vg	dm	me	00	0	00	0	0	0	0	00	0
Delicious.....	ob	ml	yrs	ma	vg	dm	l	0	0	0	0	0	0	0	00	0
Early Harvest.....	rob	m	py	sa	vgb	dk	ve	0	0	00	00	00	0	0	0	0
Early Strawberry.....	rc	s	rs	sa	vg	dm	e	0	00	0	0	0	0	0	0	0
Eopus.....	rob	l	yr	sa	vgb	dkm	ml	00	00	0	0	0	0	0	0	0
Fall Pippin.....	roblob	vl	yg	psa	gvg	dkm	m	0	0	0	0	0	0	0	0	0
Fameuse.....	rob	ms	gyre	sa	vgb	dkm	me	00	00	0	0	0	0	0	00	0
Gano.....	rob	l	dyr	msa	g	m	l	0	0	0	00	0	0	0	00	0
Golden Russet.....	rob	m	gyru	a	gb	dkm	me	00	00	00	00	0	0	0	0	0
Gravenstein.....	rob	l	yrs	sa	vg	km	m	00	00	00	00	0	0	0	0	0
Grimes.....	rob	m	y	rsa	vgb	dkm	ml	0	00	00	00	0	0	0	00	0
Hubbardston.....	obl	l	yrs	sa	vg	dk	ml	0	00	0	0	0	0	0	0	0
Jonathan.....	rob	m	yrbs	msa	vbg	dkm	ml	00	00	0	0	0	0	0	00	0
Livland Raspberry.....	ob	m	wys	rma	vg	dm	me	00	00	0	0	0	0	0	0	0
McIntosh.....	rob	ml	wyre	sa	gvg	dkm	ml	00	00	0	0	0	0	0	0	0
Maiden Blush.....	rob	m	pyb	sa	g	dkm	m	00	00	00	00	0	0	0	0	0
Northern Spy.....	rob	l	gyrs	sa	vgb	dkm	l	00	00	0	0	0	0	0	0	0
Northwestern.....	r	l	yg	sa	g	m	ml	+	0	0	0	0	0	0	00	0
Ohio Nonpareil.....	rob	ml	yrs	rsa	vg	dkm	ml	0	0	0	0	0	0	0	0	0
Oldenburg.....	rob	m	wyrs	ba	g	km	me	00	00	00	0	0	0	0	00	0
Rambo.....	rob	m	wyrs	rmas	vg	dk	m	0	0	00	00	0	0	0	0	0
Red Astrachan.....	re	ml	gyrc	a	gvg	dkm	e	00	00	00	00	0	0	0	0	0
R. J. Greening.....	rob	l	pyg	ba	vg	dkm	ml	00	00	0	0	0	0	0	0	0
Rome Beauty.....	rob	l	yrs	psa	vg	dm	ml	0	00	00	00	0	0	0	0	0
Roxbury.....	rob	ml	yru	ra	gvg	km	vi	0	00	0	0	0	0	0	0	0
Smokehouse.....	rob	ml	gyrs	sa	vg	km	ml	0	00	0	0	0	0	0	0	0
Stark.....	rc	l	gyrs	msa	g	km	l	0	0	0	0	0	0	0	0	0
Stayman Winesap.....	obe	ml	wrsc	sa	vg	dm	l	+	00	00	0	0	0	0	00	0
Sutton.....	rob	ml	pyrs	sa	vg	dkm	ml	0	0	0	0	0	0	0	+	00
Tetofski.....	rob	ms	yrs	a	g	km	me	00	00	0	0	0	0	0	0	00
Tolman.....	rc	m	wyb	s	vg	dk	vi	00	00	0	0	0	0	0	0	0
Tompkins King.....	ob	l	yrs	sa	vg	dm	l	0	00	00	0	0	0	0	0	0
Twenty Ounce.....	re	vl	gyrs	psa	gvg	dkm	ml	00	00	0	0	0	0	0	0	0
Wagener.....	rob	ml	yrsc	bsa	vgb	dkm	l	0	00	0	0	0	0	0	0	0
Walbridge.....	obe	m	wyrs	sa	g	km	vi	+	0	0	0	0	0	0	0	0
Wealthy.....	rob	m	wrsc	bsa	vg	dm	m	00	00	00	00	0	0	0	00	00
Winesap.....	rob	ml	drs	msa	vg	dme	vi	00	00	00	00	0	0	0	00	0
Wolf River.....	rob	vl	gyrs	sa	g	km	ml	00	00	0	0	0	0	0	0	0
Yellow Newtown.....	rob	ml	gy	ba	vgb	dkm	vi	0	0	0	0	0	0	0	0	0
Yel. Transparent.....	rob	m	py	sa	gvg	dkm	me	00	00	00	00	00	0	0	00	00
York Imperial.....	rob	ml	wcs	sa	gvg	km	ml	0	00	00	00	0	0	0	00	+
CRAB APPLES																
Grant.....	rob	l	rs	sa	.....	.....	l	.....	00	00	00	00	00	00	00	00
Hyslop.....	rc	dr	sa	g	kc	km	m	00	00	00	00	00	00	00	00	00
Transcendent.....	rob	ml	gyb	sa	g	km	me	00	00	00	00	00	00	00	00	00

Section 4.—Cherries (*Prunus*).

[KEY.—Form: c, compressed; h, heartshaped; o, oblate; ob, oblong; obo, obovate; obt, obt

KING'S FRUIT TREE BULLETIN

Section 9.—Peaches (*Amygdalus*).

[KEY.—Form: c, compressed; f, flat; ob, obovate; obl, oblong; ov, oval; r, round. Size: l, large; m, medium; s, small; v, very. Color: b, blushed; c, creamy; g, green; r, red; w, white; y, yellow. Adhesion: c, cling; f, free; sc, semicing. Quality: b, best; g, good; p, poor; v, very. Use: d, dessert; k, kitchen; m, market. Season: e, early; l, late; m, medium; v, very.]

NAME	Description						Recommendations for the several districts									
	Form	Size	Color	Adhesion	Quality	Use	Season	1	2	3	4	5	6	7	8	9
Alexander.....	r	m	wr	sc	g	km	ve	0	0	0	0	0	0	0	0	0
Beers.....	rob	ml	cwr	f	vg	dkm	e	00	0	0	0	0	0	0	0	0
Belle.....	rob	ml	wr	f	vg	dkm	e	00	0	0	0	0	0	0	0	0
Carman.....	r	l	w	g	em	em	e	0	0	0	0	0	+	0	0	0
Chairs.....	r	l	yr	f	vg	em	em	0	0	0	0	0	0	0	0	0
Champion.....	r	ml	cyr	f	vg	em	em	00	00	00	00	00	00	00	00	00
Chili.....	ov	m	yr	fg	g	dm	ml	0	0	0	0	0	0	0	0	0
Crosby.....	r	ml	gyr	g	g	dm	ml	00	0	0	0	0	0	0	0	0
Early Crawford.....	rov	gl	yr	f	vg	dm	me	0	00	00	00	0	0	00	00	00
Elberta.....	robl	vl	yr	f	vg	km	m	00	00	00	00	00	00	00	00	00
Fitzgerald.....	ov	l	yr	f	vg	ml	..	0	+	0	0	0	0	0	0	0
Foster.....	r	vl	yr	f	vg	ml	..	0	0	0	0	0	0	0	0	0
Greensboro.....	r	m	yr	sc	g	m	e	0	00	00	00	00	00	00	00	00
Heath.....	rov	l	wr	c	vg	dm	1	..	00	00	00	00	00	00	00	00
Late Crawford.....	rov	vl	vr	f	vbg	dm	l	00	00	00	00	00	00	00	00	00
Mountain Rose.....	r	l	wr	f	vg	dm	em	00	00	00	00	00	00	00	00	00
Niagara.....	rov	l	cwr	e	vbg	dk	m	..	0	0	0	0	0	0	0	0
Oldmixon Cling.....	rov	l	cwr	e	vbg	dk	m	0	0	0	0	0	0	0	0	0
Oldmixon Free.....	rov	l	cwr	f	vg	dk	m	00	00	00	00	00	00	00	00	00
Rivers.....	r	ml	cwr	f	g	dm	e	0	0	0	0	00	00	00	00	00
St. John.....	r	ml	yr	f	g	m	e	00	0	0	0	0	0	0	0	0
Salway.....	rob	l	yr	f	g	m	l	00	00	00	00	00	00	00	00	00
Smock.....	ov	l	y	f	g	m	1	00	00	00	00	00	00	00	00	00
Speed.....	ov	ml	gw	c	g	m	ve	0	0	0	0	0	0	0	0	0

Section 7.—Grapes (*Vitis*).

Key for Grapes, Raspberries, Blackberries, Currants and Gooseberries

[KEY.—Form: c, conical; ov, oval; ob, obtuse; obl, oblong; r, round. Size: l, large; m, medium; s, small; v, very. Color: a, amber; b, black; c, crimson; g, green; p, pale; pu, purple; r, red; w, white; y, yellow. Quality: b, best; g, good; p, poor; v, very. Use: d, dessert; k, kitchen; m, market. Season: e, early; l, late; m, medium; v, very.]

Agawam.....	ro	vl	rb	vg	gm	m	..	0	0	0	0	0	0	0	0	0
Barry.....	r	vl	b	vg	dm	m	..	0	0	0	0	0	0	0	0	0
Brighton.....	r	l	r	vg	d	e	00	00	00	00	00	00	00	00	00	00
Brilliant.....	r	ml	r	vg	dm	e	..	0	0	0	0	0	0	0	0	0
Campbell.....	r	l	b	vg	dm	e	..	0	+	0	0	0	0	0	0	0
Catawba.....	r	l	r	vg	dm	vl	..	0	0	0	0	0	0	0	0	0
Champion.....	r	m	b	g	m	ve	..	0	0	0	0	0	0	0	0	0
Concord.....	r	ml	b	g	m	m	00	00	00	00	00	00	00	00	00	00
Cottage.....	r	l	b	g	m	m	..	0	0	0	0	0	0	0	0	0
Delaware.....	r	s	r	g	dm	m	..	0	00	00	00	00	00	00	00	00
Diamond.....	r	m	gw	vg	dm	m	..	00	00	00	00	00	00	00	00	00
Diana.....	ro	m	r	vg	d	m	..	0	..	+	0	00	00	00	00	00
Duchess.....	ro	sm	gy	vbg	d	m	..	0	0	0	0	0	0	0	0	0
Eaton.....	r	l	b	g	m	ml	..	0	+	0	0	0	0	0	0	0
Empire.....	r	mas	w	vg	d	m	..	0	0	0	0	0	0	0	0	0
Gaertner.....	r	ml	r	vg	d	me	..	0	+	+	0	0	0	0	0	0
Goethe.....	o	vl	ygr	vg	d	1	..	0	0	+	0	0	0	0	0	0
Hartford.....	r	ml	b	g	m	e	0	0	0	0	0	0	0	0	0	0
Hayes.....	r	m	yw	vg	d	e	..	0	0	0	0	0	0	0	0	0
Herbert.....	r	ml	b	vg	dm	e	0	0	0	0	0	0	0	0	0	0
Iona.....	ro	m	r	vbg	d	m	..	0	0	0	0	0	0	0	0	0
Isabella.....	ro	l	b	g	dm	m	..	0	0	0	0	0	0	0	0	0
Ives.....	ro	m	b	vg	dm	e	0	0	0	0	00	00	00	00	00	00
Jefferson.....	r	ml	w	vg	d	ml	..	0	+	+	0	0	0	0	0	0
Lady.....	r	ml	w	vg	d	m	..	0	0	0	0	0	0	0	0	0
Martha.....	r	m	yw	vg	dm	e	..	0	0	0	0	0	0	0	0	0
Massasoit.....	r	l	r	g	dm	m	0	0	0	0	0	0	0	0	0	0
Merrimac.....	r	vl	b	vg	dm	e	00	00	00	00	00	00	00	00	00	00
Moore.....	r	s	r	vg	dm	m	0	0	0	0	0	0	0	0	0	0
Moyer.....	ro	l	w	vg	dm	m	0	00	00	00	00	00	00	00	00	00
Niagara.....	ro	l	w	wy	g	em	..	0	+	0	0	0	0	0	0	0
Pocklington.....	r	vl	wy	g	dm	m	..	0	+	0	0	0	0	0	0	0
Salem.....	r	vl	r	vg	dm	m	..	0	0	0	+	0	0	0	0	0
Triumph.....	r	l	y	vg	d	vl	..	0	0	0	0	0	0	0	0	0
Vergennes.....	o	l	r	vg	d	m	..	0	+	0	0	0	0	0	0	0
Victor.....	r	m	b	vg	d	ve	..	0	0	0	0	0	0	0	0	0
Washington.....	r	ml	yw	vg	d	1	..	0	+	+	0	0	0	0	0	0
Wilder.....	r	vl	b	vg	dm	em	0	00	00	00	00	00	00	00	00	00
Worden.....	r	l	b	vg	dm	m	..	0	0	0	0	0	0	0	0	0
Wyoming.....	r	sm	r	g	m	m	..	0	0	0	0	0	0	0	0	0

Section 13.—Raspberries (*Rubus*).

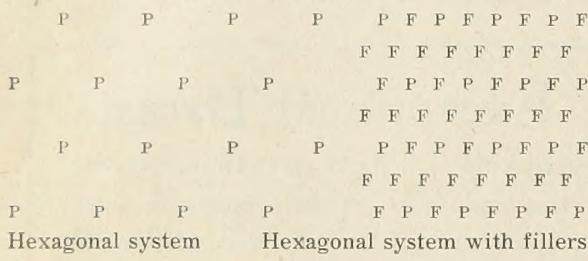
Columbian.....	r	vl	pu	g	km	e	00	00	+	0	0	0	0	0	0	0
Cumberland.....	rob	ml	b	vbg	dm	e	..	0	0	0						

KING'S FRUIT TREE BULLETIN

The Orchard—How to Make it

[Continued from page 3]

per acre may be planted. While it has this advantage, it has also the disadvantage of inconveniencing all cultivation, especially in the turning at the ends of the rows and the necessity of finishing up the corners, and also the impossibility of permitting any satisfactory method of thinning the trees without removing too large a proportion of them. When this system is used, and the trees are planted at ordinary distances apart, the orchardist is almost certain to postpone thinning the trees until they have so badly crowded each other that their vitality is much impaired. Proper thinning requires the removal of 75% of the trees, and this is very hard to do as long as they are healthy and productive.



LAYING OUT THE ORCHARD—Whatever else is done, it will be an eyesore as long as the trees stand if they are not planted in rows that are straight. The planter who uses a little care and patience and ordinary common sense will have no difficulty in getting them in straight. It requires some extra precaution to do this, however, on rolling ground. This is a practicable plan for a small field planted by the square system: first run one straight line on the longer side of the field as a base line on which to work. Then at a corner where the first tree is to be planted, stretch a line perpendicular to the base line. Be sure to get it square with the base line. At intervals on this line corresponding to the distance apart the trees are to be planted drive in strong stakes. Then carry out the same operation at the other end of the field, stretching the line perpendicular to the base line and driving in stakes where each row is to end. A wire may be stretched from stake to stake across the field parallel to the base line, and this will mark out the location of the row of trees. A white band or tag should be fastened to this wire at intervals corresponding to the distance apart the trees are to be set in the row.

For a large field, The Michigan Agricultural Experiment Station offers this very fine plan: stakes are established entirely around the field and near enough to the border to avoid the location of any row of trees, the stakes being placed at intervals corresponding to the distance the trees are to be planted apart. These stakes should be painted or whitewashed at the top to make them conspicuous and easily seen at considerable distances. Then an intermediate row of stakes should be established across the field in each direction. These stakes being put exactly in line with opposite sides of the field and again avoid the location of any row of trees. If the field is at all rolling, or if for any reason the planters cannot see entirely across the field, more intermediate lines will be needed. None of these lines of stakes need be exactly straight, but it is essential that the stakes be set perpendicular. With the stakes

thus placed, the proper location of any tree in the field can be easily found, thus the hole-digger may use his shovel handle as a temporary stake and align it with two stakes in each of the two directions at right angles. The location of the handle indicates the center of the hole. In planting, the tree should be used as a temporary stake and aligned with two stakes in each of two directions at right angles. In this method any number of men may plant trees in the field at the same time, and the work may begin in any part of the field.

WHAT TO PLANT—The whole success or failure of the orchard depends on the kind and variety of trees selected. Do not experiment with anything new unless you intend your work to be only an experiment. The best recommend the orchardist can have for any variety is that it has proved to be successful in his locality or in other sections where the soil and climate are identical or nearly so with those in his section. The American Pomological Society and the State Experiment Stations have done very valuable work in furnishing planters with definite information along this line. Do not hesitate to consult these experiment station experts on horticulture.

It is never advisable to plant more than four or five varieties in a commercial orchard. Experience has shown time and again that it is much easier to dispose of fruit from an orchard if it has only a few varieties. Then, too, it is important to consider the nature of the market to be supplied. If it is a local and select one, only varieties that would supply a succession of high quality fruit should be used. For the distant market, the color and size of the fruit is still the most important factor, and no doubt will be for some time to come although the public of late is beginning to show some discrimination as to the quality of the fruit rather than its size and color.

PLANTING THE TREE—It is essential, as said before, to prepare the ground in a thorough manner. You cannot run the harrow over it too many times before planting. You may lessen the labor by plowing along the line of tree rows, but the holes must be dug much deeper than the plow will go and this work has to be done by hand. The manner of trimming the tops and roots is very important as is shown in another article in this paper. Set the trees a little deeper than they stood in the nursery and be sure to pack the dirt firmly around the roots. Do not be afraid that you will make it too firm. The tree has a poor chance to live unless the roots come into close contact with the earth. This point is insisted on because so many people are careless about it and the tree suffers as a result. The last two or three inches on top of the ground should be loose to afford a dust mulch and thus prevent the evaporation of moisture from the ground around the tree. Never throw sods or coarse manure into the bottom of the hole, thinking to furnish fertility to the tree. They are sure to cause injury by heating and absorbing moisture. These things will do fine on top around the tree as a mulch.

AFTER CARE—Give the young orchard good care. By so doing the trees will come into bearing earlier and remain in a condition of

health and thrift. Thorough and systematic cultivation to keep down weeds and conserve moisture is the first requisite. Be sure, however, not to bark or injure them in driving through with the horses. Cover the ends of the whiffle trees and hames with burlap or leather to prevent this; and a muzzle on the horse will save many limbs from being nipped.

The methods of controlling insects and fungus diseases should all be known by the orchardist. It is a simple matter to become familiar with the best manner of spraying and other means of control. The young trees need to be watched and given immediate attention at the first sign of disease or insect attack.

The Fruit Tree

By Liberty Hyde Bailey

A FRUIT tree is a symbol of home and comfort and good cheer. It is the emblem of good works.

By the woodshed or the pump, or against the barn or over the garden fence, the apple tree or pear tree connects the residence with the world of life and space that stretches out to woods and farms. We rest our affections on it, as a midway place between ourselves and our surroundings. It is the warden of the fields and the monitor of the home. It is an outpost of the birds. It feels the first ray of morning sunshine. It proclaims every wind. It drips copiously in the rain. Its leaves lie on the grass when the year goes down into the long night of winter. It stands its ground fearlessly in pinch of cold and stress of storm. And in the spring its brightening twigs and swelling buds reveal the first pulse in the reviving earth. Every day of the year is in its fabric, and every essence of wind and sun and snapping frost is in its blossom and its fruit.

I often wonder what must have been the loss of the child that had no fruit tree to shelter it. There are no days like the days under an old apple tree. Every bird of the field comes to it sooner or later. Perhaps a humming bird once built on the top of a limb, and the marks of the old nest are still there. Strange insects are in its knots and wrinkles. The shades are very deep and cool under it. The sweet smells of spring are sweetest there. And the mystery of the fruit that comes out of a blossom is beyond all reckoning, the magic growing week by week until the green young balls show themselves gladly among the leaves—the leaves that hold the tang of summer in them. And who has not watched for the first red that comes on the side that hangs toward the sun, and waited for the first fruit that was soft enough to yield to the thumb! Verily, the old apple tree carries all the memories of the years.

The worth of a fruit tree is very real, quite beyond any figuring in dollars and pounds. I think we do not know how good a teacher it has been or how much it has steadied the lives of many folk.

And an orchard is only a family of fruit trees. Orchards are also very real, but I hope that we do not lose the feeling of the tree. Our affections cling to trees one by one; and then the orchard becomes almost a sacred spot. A fruit tree in full load is one of the most marvelous objects in nature. We can not understand how the work is done, how such abundance is produced, and how such color and substance and flavor and faultless form are derived of the crude elements of soil and sunshine and air. It gives of itself out of all proportion to the care and affection that we bestow on it. It is a very sermon in liberality. It is a great thing that the making of orchards is spreading so rapidly, for it means not only commercial thrift but a growing appreciation of the tender and delicate and refreshing products of the earth. The race renews itself when it does these things.

The Rich Harvest

By Bruce Kenneth

"SO YOU are going to leave me, Jim, and try your luck in the city. What can be the matter with the boys of this age."

Mr. Norton shook his head slowly and his eyes wandered over the fields toward the distant hill. His son, Jim, leaned against the fence, gazing at an auto slowly climbing the road.

"Well, father," he answered, "you know our ideas of farming are different. You have given me a good education, and I wish to make something of myself. But I see no opportunity on the farm."

"Yes, I know; you have these new ideas of progress and experiment. You say my method is old fashioned and out of date; that I am robbing the land and getting no benefit. Well, maybe I am, maybe I am."

Old Norton took off his hat and ran his fingers through his hair.

"How is the harvest this year, father?"

"Poor, my boy, poor," he answered, putting on his hat. "Well, I must be about the chores. We'll talk about this later, my son. Don't leave the old farm, my boy, mother and I need you."

Jim Norton stood for some time, his mind occupied with many thoughts. He was young, bright, vigorous, just out of High School and ready for the battle of life. He had advanced ideas of farming and tree raising, and he knew the farm could not succeed unless his father gave up the old way. To carry out his ideas, Jim needed money, but his father was set in his methods, and would not consent to his son's plans. Young Norton decided to give up the farm, and seek success in the city. This decision greatly worried his father and mother, for Jim was the only son. Something must be done, and that quickly, or many hearts would be troubled. With these thoughts running through his mind, Jim turned from the fence and entered the house.

Darkness had descended on the valley. An October moon was climbing over the hills as Jim Norton drove along the silent road. He was still troubled with the problem that had vexed him for some time. Suddenly he guided his horse up a long drive that led to a big farmhouse standing on a little hill back from the road. A soft voice came from the porch.

"I have been waiting. Is not the moon beautiful?"

Essie Merrill stepped from the porch, a lovely picture in the moonlight. Jim assisted her into the carriage, and together they drove along the gleaming road. She turned to him as he sat quietly driving.

"Won't you tell me what has been troubling you for some time?"

He told her all, for he knew that in her love for him she could find a remedy. He recounted his ideas, his ambitions, his father's old ways

and methods. He could not carry out his father's policy, so he must strike for the city.

They remained silent for some time gazing at the scene around them, thinking deeply. A gorgeous moon floated in the heavens, shedding its silver light on hill and valley. The bright moonbeams kissed the trees in the orchards, and silver rays were reflected from the gleaming apples on the richly laden trees. Greenings, and Baldwins, and the red-cheeked Spies. The healthy, stately little peach trees stood in long straight rows, like soldiers. The whole valley was glowing with abundance. Below them lay an ideal farm, for a man of big progressive ideas ran it.

"Ah," muttered Jim Norton, "that is my idea of an orchard farm. I would live and die content on such."

Essie turned to him.

"And why not succeed, as has this man? All this belongs to my father. He struck out on new lines, but was robbed by many big nursery firms in whom he trusted. But once, while at Normal School our professor wanted some tiny seedlings for an illustrated lecture on grafting. A young progressive nursery firm gave them to him. The professor praised them highly. At my suggestion, Papa bought some trees from them, and lo, here is the result."

She pointed to the luxuriant orchards smiling in the moonlight. Jim eagerly leaned toward her. Here lay his opportunity, his hopes for success.

"Who are they," Jim cried eagerly, "and I shall seek them out?"

"They are King Brothers, nurserymen of the world famous Genesee Valley, they will help you. Oh, if you will but decide to take up fruit growing as a profession and go to these men for practical advice, I know you will succeed. Think of their honesty, think of their eagerness to help all, think of your ambitions, and—"

"—and your love," he cried. "I will, I will go to them. I see it all now."

He clasped her hand in his, and they slowly drove over the hill in the moonlight.

A new light had broken on Jim, and the next day he poured out his story to his father. Jim told him of King Brothers; he told him of the success of Essie Merrill's father, he showed him where they could not fail. Old Norton shook his head slowly.

"Why my boy, once I bought trees from an agent, at fifty cents apiece, and they were no good."

"But father, these men are not agents. They follow the best methods known to practical and scientific horticultural experts. Give me, and give them a chance."

The old man stood thoughtful for a moment. Then he suddenly held out his hand to his son.

"Stay with me and I will furnish you with money. Go to them for stock and advice and I will try and help you in your work."

They clasped hands, both hearts beating happily.

IN AFTER YEARS

Years had passed. Standing on the brow of a hill, hand in hand, were two happy people, Jim Norton and Essie Merrill. Before them, on the smiling slopes and in the beautiful valley, the healthy glowing trees were smiling in the bright sunlight. The whole farm was rich with abundant crops, and no better orchard could be found in the entire county, and all this was Jim Norton's.

"And you have succeeded," Essie said, waving her hand toward the trees.

"Ah," Jim cried, "I am a happy man. The richest farm for my labor; and the best and most beautiful girl for my future wife."

He put his arm around her and drew her close to him. She gazed up into his eyes and asked suddenly:

"And her name is?"
And he answered, "Essie."

Your Farm an Investment

THE appearance of your property goes a long way toward fixing its value. Paint and shrubbery will yield returns incredible, and every farm home may be made more pleasant and attractive by a little attention along this line. A man who regards his farm merely as an investment should remember that any improvement, which increases the value of the holding, increases his capital. Some farms would be worth much more if they were not so inaccessible, and we should make every effort to get a good road leading to our farm. How attractive and beautiful a highway can be made by planting trees on either side of the road about 100 feet apart. This not only adds to the beauty of the landscape but gives distinction to the section where the practice prevails, all of which is bound to make a great difference in the actual value of the farms along such a highway.

Many farms have very few if any trees growing on them. "As the natural forests are being rapidly cut away," says Pennsylvania Farmer, "it is becoming necessary to plant trees for a wind break for the farm buildings, or endure the extreme cold winds of winter, and in summer such a grove is without price on account of the shade and comfort that may be enjoyed. Thus plantings of this class answer a two-fold purpose, i. e., for profit from the timber in course of time, and protection, as well as their aesthetic value. For telegraph poles and fence posts, catalpa and black locust are suitable, making very rapid growth. The soft and hard maples are ideal trees for shade. The nut-producing trees should have an important place in the farm plantings, not only on account of the nuts, which are in demand, but also the high value of the timber. The hickory, walnut, butternut, and chestnut will grow on most soils."

What We Stand For In The Nursery Business

These Three Propositions are the Essential Features of Our Policy

First. We teach you through our Consulting Department how to grow your own fruit trees from the seedlings. This is virtually a **Correspondence School** in the nursery business. The department is under the personal direction of Martin King, Jr., the rates of tuition are extremely low, and already hundreds of fruit growers are regular correspondents of this department.

Join the list that's growing and grow with us

Second. We will contract to propagate here in Dansville—in this famous upper valley of the Genesee, all the fruit trees you want, with the understanding that you are to furnish the scions for budding of such varieties as you may select **from your own bearing orchard**. Here is your opportunity to have trees grown at a reasonable price by skilled workmen under your personal direction.

Third. We are offering direct to planters the highest quality Dansville grown trees. Careful scion selection, thorough, painstaking, and scientific workmanship, the best soil types to be had anywhere, and ideal climatic conditions—all combine to make **our Dansville grown trees** the best to be had at any price.

KING BROTHERS' NURSERIES, Dansville, N. Y.

The Home Fruit Garden

THREE are ever so many people to whom it would be a source of real pleasure and health to have a little fruit garden in connection with their home. In the hope that we may interest some of these, we print this article consisting mostly of extracts from Farmers' Bulletin No. 154 which may be had free complete by applying to the Department of Agriculture at Washington.

"A fruit garden consists of an assemblage of fruit-bearing trees and shrubs, maintained for the purpose of supplying the family with fruits. In its general purposes, then, the fruit garden is intended to accomplish results similar to those of the vegetable garden. In distinction from an orchard, the fruit garden is more restricted in area; it is intended for home rather than market purposes, and consequently comprises a much greater variety of fruits.

Considering the general desire for and appreciation of fruits by people of all classes, it is amazing that even those who have suitable situations and facilities for raising them, and who can not purchase them because of remoteness from markets, have not established home fruit gardens.

With the growth of the commercial fruit interests of the United States the home fruit garden has been lost sight of. Only a few years ago the owners of home gardens not only led in the production of fruits, but were our authorities as to how and where to grow them. Today these gardens, while no less numerous or important, are over-shadowed by the orchards where fruit is grown for commercial purposes.

The inhabitants of this country are notably a fruit-loving and fruit-eating people. Notwithstanding this, however, fruit culture has grown to be classed among the specialties, and few persons who consume fruit are actual growers. The possibilities in fruit culture upon restricted areas have been very generally overlooked, with the result that many persons who own a city lot, a suburban home, or even a farm, now look upon fruit as a luxury. This can be changed, and much of the land which is now practically waste and entirely unremunerative can be made to produce fruits in sufficient quantity to give them a regular place upon the family bill of fare, and at the same time add greatly to the attractiveness of the table and healthfulness of the diet. The home production of fruit stimulates an interest in and a love for natural objects which can only be acquired by that familiarity with them which comes through their culture. The cultivation of fruits teaches discrimination. A grower is a much more intelligent buyer than one who has not had the advantages of tasting the better dessert sorts as they come from the tree. If every purchaser were a good judge of the different kinds of fruits, the demand for fruits of high quality, to produce which is the ambition of every amateur, as well as of every professional fruit grower, would become a reality. But until some means of teaching the differences in the quality of fruits can be devised the general public will continue to buy according to the eye rather than by the palate. The encouragement of the cultivation of fine fruits in the home garden will do much toward teaching buyers this discrimination.

Besides increasing the fruit supply and cultivating a taste for quality, the maintenance of a fruit garden brings pleasant and healthful employment, and as one's interest in growing plants increases, this employment, instead of proving a hardship, will become a great source of pleasure. The possession of a tree which one himself has planted and reared to fruit production carries an added interest in its product, as well as in the operation by which

it was secured. The unfolding of the leaf, the exposure of the blossom buds, the development of the flowers, and the formation of the fruit are all processes which measure the skill of the cultivator, and when the crowning results of all these natural functions have been attained in a crop of perfect fruit, the man under whose care these results have been achieved will himself have been made happier and better.

To those familiar with the facilities at command for the culture of fruit and the general interest in the subject, the remarkable absence of successful fruit gardens about city, suburban and country residences can be explained only on the ground that those who would be most likely to give attention to their care and maintenance have no object lessons or literature at hand to guide them in laying out such gardens.

In order to prove a source of constant pleasure and gratification a fruit plantation must claim the attention of the owner from early spring to late autumn; its products, too, must be so planned as to cover the greatest possible portion of the seasons between frosts. The problem presented involves a succession of fruits, from earliest to latest, as well as a combination of light-loving and shade-enduring plants. The intensive culture and the liberal feeding to be given demand that all plants be of types which bear early and heavily in proportion to their size. The question of longevity is of no moment; immediate fruit production is the object.

Since one does not choose the site of his residence on account of the character of the soil of the locality, but because of other natural advantages of the place, it is obvious that the soil at the disposal of the grower will frequently be ill-suited to the purposes of a home fruit garden. For a commercial place on an extensive scale it would be out of the question to attempt to alter the character of the soil to suit the needs of the plant, but with a small area the case is quite different. If the soil is heavy it can be lightened with sand, if it is not desirable to increase the proportion of humus which it contains; if it is lacking in organic matter the addition of leaf mold and well rotted manure or the turning under of some leguminous crop, such as cow-peas or Canada field peas, will accomplish the desired result; if the soil is loose and sandy, losing its store of plant food readily, this fault can be remedied by the addition of retentive material, such as clay; the amount of clay to be added must be governed by the degree of stiffness desired in the soil.

Sand will lighten and facilitate natural drainage but if the soil be unduly moist the only safe and satisfactory remedy lies in thorough underdrainage. This can be accomplished in two ways: Drains may be dug and a stone conduit built to allow the superfluous water to escape, or, what is better, agricultural tile may be laid in the bottom of the trench. If the soil is very stiff and retentive, the tiles should not be laid over $2\frac{1}{2}$ to 3 feet apart. If the soil is porous, the drains may be placed farther apart and buried deeper. A double purpose is served by underdraining. The superfluous water which tends to make the soil cold, sour and 'late' is removed, thus making the soil warmer and earlier; and by the admission of air the acidity is slowly overcome. The processes of oxidation and nitrification are also afforded better conditions for action, and while drainage adds nothing to the soil in the way of plant food, the mechanical operation of removing water and admitting air is quite as marked in its effects as a liberal dressing of manure, for the store of plant food which was withheld from the plant is allowed

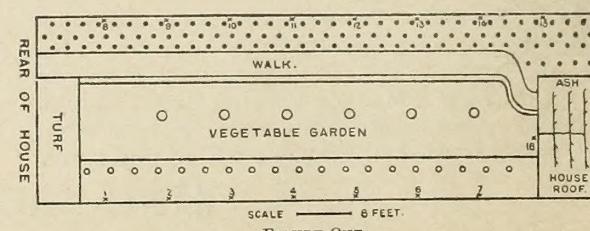
to become available. There is little wonder in the light of these facts that early agricultural writers propounded the axiom, 'Tillage is Manure.'

The holes in which trees, vines, or shrubs are to be set should be ample, so that the roots of the plant may have full spread without bending them out of their natural course. The earth at the bottom of the holes should be loosened a spade depth below the line of excavation. The soil placed immediatley in contact with the roots of the newly set plants should be rich top soil, free from sod or partially decayed organic matter. Firm the soil over the roots by trampling, as this brings the soil particles together and at the same time in close contact with the surface of the roots. A movement of soil water is thus set up and the food supply of the soil brought immediately to the use of the plant. When the operation of transplanting is complete, the plant should stand one or two inches deeper than it stood in the nursery.

Besides the special adaptations afforded by dwarfed trees and by special combinations of low-growing and high-growing plants, certain well-known systems of pruning and training allow additional liberties to the skilful planter, as, for instance, the grape vine, which readily lends itself to arbor training, may be utilized for screening tender or shade-loving plants. Strawberries adapt themselves readily to such situations if the shade is not allowed to become too dense. Among flowering plants none will thrive better under such conditions than pansies and violets, and among garden vegetables, lettuce and radishes may be successfully grown under such a canopy, as they will be out of the way before a dense shade is formed by the grapes. Asparagus may be successfully grown under a shade of this character, as it will, because of its early habit, make a large share of its growth before the tardy grape will have produced a shade dense enough to interfere with the young, tender shoots.

The vine may be utilized as a cover for walks and drives or as a canopy over small outbuildings. A cozy summer veranda may be covered by grape vines, thus securing the double advantage of a cool, shady nook during summer and a supply of fruit in autumn."

In a garden a small ash house as shown in Figure 1 can be made to support a grape vine capable of producing 300 clusters of grapes. The small inclosure in which this vine can be grown, only 25 feet wide and 80 feet deep, also can supply foot room for 15 other grape vines, several dozen strawberry plants, a row of currants and a limited supply of vegetables and annual flowers, besides a few square yards of beautiful turf. The plan of this garden (Fig. 1) shows the arrangement of the plants. The grape vines are trained to the high, tight, board fence which separates the lot from that of the next neighbor. The currants are planted near one side of the inclosure, while the main walk occupies a corresponding position on the opposite side. The area between the walk and fence on one side is given up to strawberries while that between the walk and currant bushes on the opposite side forms the flowers and vegetable plot.



Where there is more land at one's disposal

there may be both a fruit garden and a vegetable garden. An area 60x80 feet set apart as a fruit garden will accommodate 442 fruit-bearing plants. As before mentioned, the general plan will serve as a guide to planters in any portion of the United States, but the sorts chosen must be suited to that particular section of the country in which the work is to be executed.

As will be seen by Fig. 2, this garden is planned to utilize the space to the best possible advantage. In order to secure large returns the soil must be kept cultivated and well enriched; walks, if any are to be maintained as permanent features, should only exist where necessary for ease and comfort in getting about. On account of the small area occupied and the close planting necessary to secure the result desired, the culture of such a garden must of necessity be done by hand. If the grape vines are trained on the high renewal system, they will serve both as a screen for the rest of the garden and as a source of fruit supply. A good wire fence should, however, be constructed on the line between adjoining properties, and the grape border planted not farther than two feet from the boundary fence.

Fruit-Bearing Plants That can be Grown on an Area of 60 by 80 Feet

Thirty-two grapevines, dispersed at intervals of 10 feet around the entire garden.

Three rows, each containing 6 trees, dwarf pears, 18 specimens in all (rows Nos. 2, 10, 14).

One row, 6 specimens, peaches (row No. 4).

One row, 6 specimens, cherries (row No. 8).

One row, 6 specimens, dwarf apples (row No. 6).

One row, 6 specimens, plums (row No. 12).

One row, 20 specimens, blackberries (row No. 1).

Two rows, 40 specimens, blackcaps (rows Nos. 3 and 5).

Two rows, 40 specimens, red raspberries (rows Nos. 7 and 9).

Three rows, 300 specimens, strawberries (rows Nos. 11, 13, and 15).

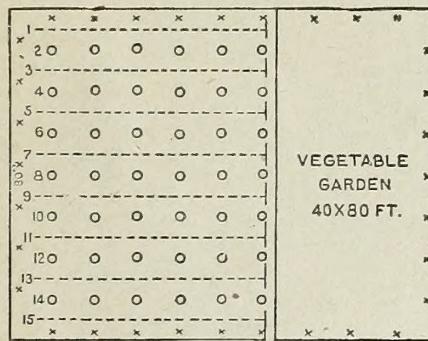


FIGURE TWO

The Farmer's Fruit Garden

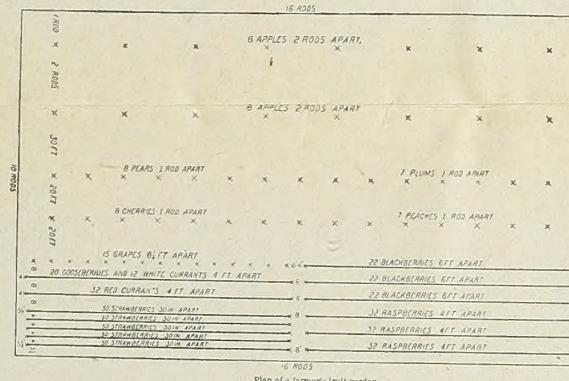
U. S. Dept. of Agriculture; Bulletin No. 169

"**N**O FARM, no matter what special branch of agriculture forms its main purpose, is complete without its family orchard," says A. V. Stubenrauch, of the Illinois Experiment Station, and yet by far the larger proportion of the farms of the country are not adequately provided for in this respect. The principal reason for this, as given by Mr. Stubenrauch, is that "too often the family orchard is viewed from a commercial standpoint—that is to say, natural difficulties which would render a commercial orchard impossible, are looked upon as insurmountable for the family orchard as well. This is wholly an erroneous point of view. Special practices which would be impossible and impracticable in a commercial orchard are not only possible but profitable in the family place." Such an orchard may not be profitable from a purely pecuniary standpoint, but as a means of increasing the variety, attractiveness, and healthfulness of the diet it has a value which is none the less important because

it can not be computed in dollars and cents. Careful attention, however, to details of culture, management, etc., is necessary to success. Among the more important matters to which special attention must be given are thorough and frequent cultivation to conserve soil moisture in time of drought, and to cause regular and uniform ripening of the wood before the fall frosts, the selection of a location for planting which has good air drainage, in order to safeguard as much as possible against late spring frosts. With the more delicate fruits "laying down" and covering may be found necessary in severe winters.

In laying out and selecting the trees for the home plantation two ideas should be kept in view: (1) The area should not be larger than is actually necessary, and it should be arranged so as to allow most convenience in working—that is, the rows should be made as long as possible. (2) The trees should be the best—the best are always the cheapest, at any price, for this purpose—and should consist of those varieties not only adapted to the locality and the purpose of the grower, but they should be selected to furnish a fairly continuous supply of fruits, both for table and culinary uses. The kinds of trees suitable for the home garden will have to be governed by the locality and the individual tastes of the grower.

The diagram suggests a plan of a fruit garden of one acre, and "shows how great a range of fruits can be secured even on so small an area. Individual tastes vary, and some may not care to have all the kinds of fruit mentioned, preferring rather to have more of some favorite ones. By a judicious selection of varieties and by giving good care, it is calculated that



an acre laid out as suggested in the diagram should yield an adequate supply of fruit for both the table and for 'putting up' to satisfy the demands of even the largest family."

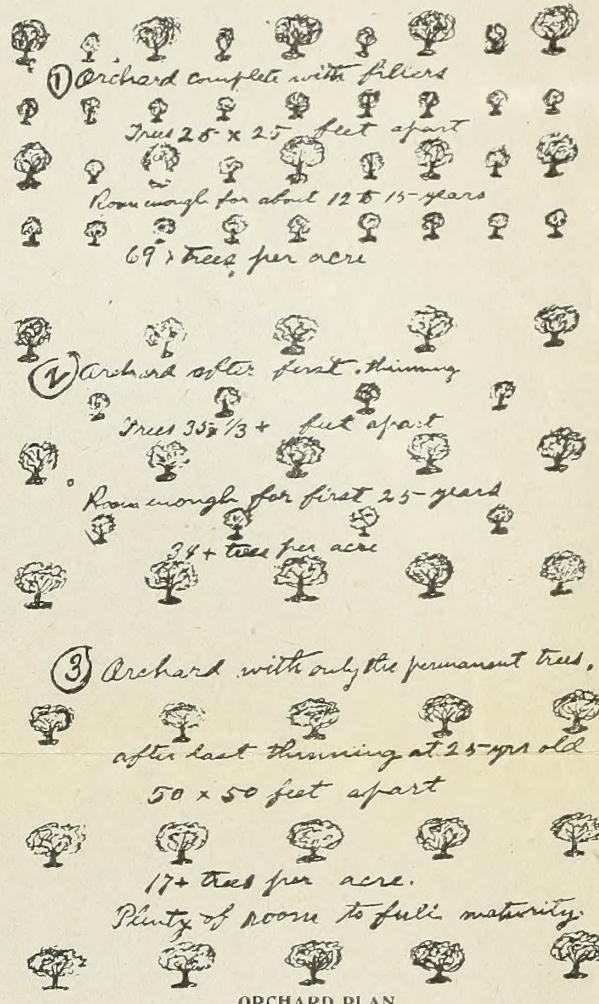
Possibilities of a Ten Acre Apple Orchard from Planting to Bearing a Profitable Crop

IT WILL cost you just \$126 to buy 700 1 yr apple trees at 18 cents each, and this number will plant a ten acre field setting the trees twenty-five feet apart each way. The cost of fitting the land and planting the trees should not exceed at the outside \$74 for the ten acres. Thus the initial investment is approximately \$200 besides the land.

It is not advisable to plant peaches between the apples as fillers, for they require radically different spraying and treatment; besides they are apt to overgrow the apple trees with their roots and injure them. Quick bearing varieties may be planted between the permanent trees, such kinds as Wagener, Grimes Golden Duchess, Wealthy, and Yellow Transparent. For the permanent trees, Baldwin, Spy, and Greening are the three leaders in the East. Such kinds as Hubbardston, Winter Banana, McIntosh Red, Rome Beauty, and Jonathan should also be given consideration. In the more Southern sections, York Imperial, Winesap, and especially Stayman's Winesap rank among the best. Do not plant more than five kinds in the orchard. It is harder to find a

market for too many kinds and handle them.

Professor H. E. Van Deman thus describes the method of planting in squares with the use of fillers: "What I think to be the best style of apple orchard planting is to set the trees in plain squares 25x25 feet apart. Such varieties as are intended for permanent trees should be set at the fifty feet checks and the others in all the interspaces. This makes three fillers or temporary trees to every permanent one. If desired there can be three varieties used and have them all arranged for progressive thinning. The diagram shows how this can and should be done.



Top cut, No. 1, represents orchard complete with fillers. No. 2, middle division, shows orchard after first thinning, which may occur at the end of 15 years. No. 3, lower division, shows the orchard with only the permanent trees left at the end of about 25 years.

"By this plan the entire ground will be occupied by the trees for the first few years before they are old enough to bear, and when cultivated, garden or farm crops may be sown between them. When about fifteen years of age they will show the first signs of contact, and then the first cutting out must be done. And there must be no waiting for 'one more good crop' or any such thing. When the trees need to be taken out they must come out. Each alternate row diagonally when removed will leave the remaining trees a little more than thirty-five feet apart and they can stand so for about ten years longer. When crowding is again about to occur, the remainder of the fillers must be taken out, leaving the permanent trees 50x50 feet apart and they will need that much room for full development if they stand in a region where apple trees grow to normal size."

During the first few years it is profitable to grow some annual crop between the trees such as beans. It has been shown that young trees make this crop about 30% less than it would be if the trees were not present. Assuming, therefore, that the net returns from an acre of beans would be about \$16, it is evident that the young orchard only takes \$4 per acre or \$40 per year for ten acres from what the net proceeds would be if the whole field were given over entirely to some farm crop. A crop like beans which does not draw much fertility

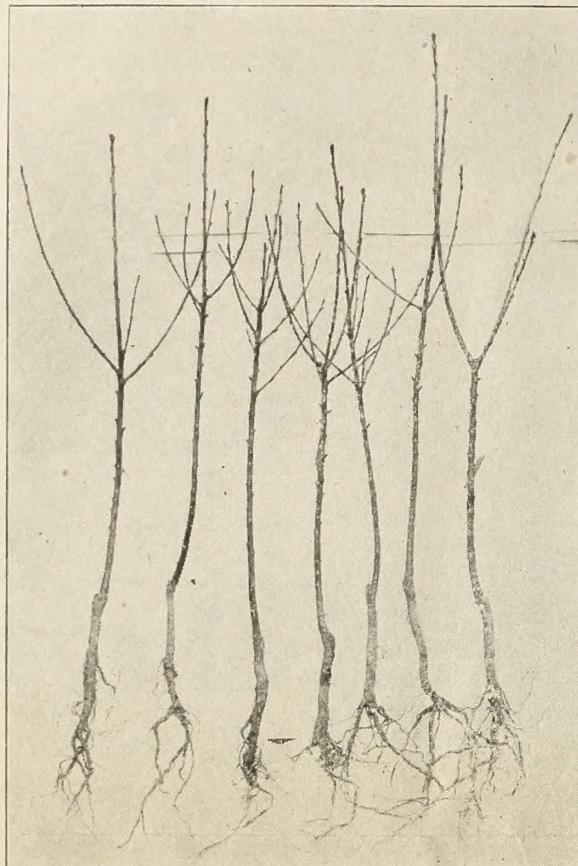
Some Real Bargains

Do not fail to read our price list for lowest quotations on larger grades.

We challenge any honest competitor both as to the price
and the quality of our products.

Cherries
4c each

Plums
5c each



Actual Photographs of the Sturdy, Healthy Little Trees
We Offer at the Rock Bottom Prices Listed on this Page

These trees are going to be sold rapidly as soon as this paper reaches our readers. Send us your order today while the assortment of varieties is complete. We guarantee every one of these little trees to be healthy, sturdy, true to name and first class in every respect or your money back. They are all Dansville grown and absolutely free from San Jose Scale or any other plant diseases.

Pear Trees, 6c each
2 yr., 2½ to 3 ft.

Kieffer Bartlett Seckel
Clapp's Fav. Flemish Beauty

Plum Trees, 5c each
2 yr., 2½ to 3 ft.

Lombard German Prune

Beauty of Naples Bradshaw
Shipper's Pride Shrop. Damson

Apple Trees, 8c each
2 yr., 2½ to 3 ft.

Baldwin N. Spy King
R. I. Greening Rome Beauty
Ben Davis Golden Russet
Grime's Golden York Imperial
Stark Wolf River Wealthy

McIntosh Red Winesap
Fameuse Duchess Rox. Russet

Cherry Trees, 4c each
2 yr. 2½ to 3 ft.

Black Tartarian Gov. Wood
Napoleon Schmidt's Big.
Windsor May Duke Ostheimer
Montmorency Fy. Richmond
Baldwin English Morello

from the ground is to be preferred. It is not necessary to cut and prune the young trees if they have been planted properly. Yearling trees headed back to from 18 to 24 inches so as to make low heads will be only injured by the use of the pruning knife; and the age at which they will bear a profitable crop considerably increased. They should be watched carefully, however, after planting and only four or five sprouts distributed as evenly as possible around the trunk of the yearling and not all at the same height allowed to grow. Simply pinch the others off with the thumb and finger and keep the bottom of the tree free from all suckers. Then keep out of them afterwards with the pruning knife. As a writer in the latest Horticultural Number of the Rural New Yorker expresses it, 'The apple tree of the low-headed type, which had been pruned but little if any after time of setting until fruit production had commenced, produced fruit sooner than those orchards in which a so-called perfect system of pruning was inaugurated from the start and carried out. Most varieties of apples, if left to form their own heads, formed a shapely symmetrical uniform tree of the type of that variety. A close study of what happens when many branches are cut back or removed as is often done on young trees, shows that twigs, suckers, and long young growth are made at the expense of fruit spurs and fruit bud production.'

The authorities at the State Agricultural Experiment Station at Geneva give convincing arguments to show that it does not pay to fertilize the apple orchard if the ground is in good condition, as it should be, when the trees are planted. This rule of course does not apply if annual crops are planted between the young trees. In such case, you must put back what you take off.

It is highly desirable, however, to sow a cover crop in the orchard whether the trees are young or old. Opinions differ as to what to sow, but crimson clover is very popular in South Jersey and Delaware and regions having such climate. The most successful clover crop in the north is vetch and rye mixed at the rate of one bushel of each per acre. Vetch is a wonderful nitrogen gatherer; and, if the practice of sowing it with rye is kept up from year to year and the crop plowed under in June, it will add wonderfully to the humus content and fertility of the soil.

The early bearing varieties will come into fruit in about five years from time of planting. An average yield of one bushel per tree or 700 bushels on the ten acres will be a profitable crop. Remember there are orchards in Western New York that yield an annual net income of over 10% on a valuation of \$1000 per acre.

The Dansville Nurseries

[Continued from page 5]

did everything possible to aid and encourage them. Today the same splendid spirit prevails. There is no problem of capital and labor to be solved here. Competition is keen, but all the growers are on very friendly terms and are co-operating in every way to grow better trees every year. Many firms are now selling their trees direct to the planter instead of to the retail nurserymen and dealers of other places. Their advertisements appear regularly in all the best agricultural papers of the country; and, if the present rate of growth continues, in a few years the amount of business done by the nurserymen of this town will be expressed in terms of seven or perhaps eight figures. Dansville will be known in every town and hamlet of the United States for the superior excellence of her nursery products.

COMMENT: We have nothing more to add to this article at this time now that it is given country wide circulation except to say that it would be unfair to both the growers here and to the planters of the Eastern States for retail nursery firms to establish themselves in Dansville and buy the cheap trees in carload lots of the Western nurserymen to retail here. We want no Southern or Western grown trees brought here to Dansville to be pawned off on the planters of this country as Dansville Grown Quality Trees.

Why not Help Your Friends! AND Get Some Cherry Trees Free!

LADIES AND GENTLEMEN:—Millions of dollars are taken from the pockets of our country people every year by tree agents. They sell the standard varieties of cherries oftentimes for 75c per tree. If you do not believe this, inquire a little among your friends. Call them up on the phone and ask them what price they paid the agent.

We believe that it is quite impossible for a man or woman to read our Bulletin and ever be taken in in this way. You are reading it. We let you be the judge.

But your friends will probably never read this Bulletin without your co-operation. You probably saw our advertisement in Farm Journal, The Rural New Yorker, Country Gentleman, Ohio Farmer, Michigan Farmer, Pennsylvania Farmer or some other standard publication and wrote us for a copy. Only a few of your friends will ever do this. Let us co-operate to help them.

Here is our offer. We will send you free one cherry tree such as are advertised on this page at 4c each for every two names you send us before Feb. 15th, 1913. Now please take a little time and send us the list today. Do not send more than fifty names and as near that number as you can. This is the most remarkable offer we have ever made. Heretofore we have offered trees only on condition that some of the people whose names were sent us would buy trees, but we are trusting you this time to send us the addresses of live, intelligent, discriminating land or lot owners even if they may be thinking of buying only five trees. We want them to read our Bulletin. We want to serve them and we want to pay you for your assistance in helping to further introduce our business to the people of this country.

KING BROS. NURSERIES, DANSVILLE, N. Y.